

lesson 8: humans are organisms, too

estimated time

30–40 minutes

science GLEs

EC.1.D.4.a. Identify examples in Missouri where human activity has had a beneficial or harmful effect on other organisms (e.g., feeding birds, littering vs. picking up trash, hunting/conservation of species, paving/restoring greenspace)

vocabulary

Beneficial effect
Harmful effect

lesson objectives

1. Explain how humans are just one of the organisms interacting with plants and animals in Missouri.
2. Identify examples in Missouri where human activity has had a beneficial or harmful effect on other organisms.

essential questions for the lesson

1. How are we part of ecosystems?
2. How can human activities help or harm an ecosystem?

teacher notes

Students should have read Chapter 8, “Humans Are Organisms, Too,” on pages 36–38 in their student books prior to engaging in this lesson.

This lesson brings together all concepts in the book. Discussions on human interactions (both harmful and beneficial) are continued from *Activity 7.3* and reinforce the concept that human organisms and populations are a part of ecosystems, too.

Background information—A native species is a plant or animal that occurs naturally in a certain area. A native Missouri plant or animal originated in Missouri. A native Missouri plant or animal was not introduced into Missouri and existed within the state borders prior to the arrival of settlers. Because a native plant or animal evolves in an area over time, it typically co-evolves with other species that serve to keep its population in check through predation, competition or disease. Non-native species (exotic species or alien species) are ones that have been introduced or moved by human activities to an area where they do not naturally occur. A non-native species is not necessarily harmful, and in fact, some non-native species are beneficial (apple trees and honeybees). However, when a non-native species overruns or out-competes native species in natural communities or ecosystems and causes ecological or economic problems, it is called an invasive species.

outline of answers to objectives

See following page.

essential activities

Activity 8.1: Humans Interactions Continued

optional activities

Optional Activity 8.A: Can They Live Here?

Optional Activity 8.B: Interactive Web

Optional Activity 8.C: MDC Video Segments

Optional Activity 8.D: What Is Going On In Your Neighborhood?

Optional Activity 8.E: Conservation Programs

summary

A human is an organism living with other human organisms to form populations of humans. Human populations living among other populations of organisms become part of a community. Add the non-living things, such as sunlight, water, temperature, soil, landforms and air, and humans become part of an ecosystem. Humans have opportunities to keep ecosystems healthy and balanced. Humans also have the power to make choices and decisions that could unbalance ecosystems forever.

outline of answers to objectives—lesson 8

1. Explain how humans are just one of the organisms interacting with plants and animals in Missouri. (page 36)
 - a. A human is an organism living with other human organisms to form populations of humans. Human populations living among other populations of organisms become part of a community. Add the non-living things, such as sunlight, water, temperature, soil, landforms and air, and humans become part of an ecosystem.
 - b. Humans are part of food chains. They are consumers, and energy is passed along to them through the producers and consumers they eat.
 - 1) Most humans are omnivores.
 - 2) Some humans are vegetarians (herbivores).
 - 3) Some humans farm and hunt for food.
 - 4) Some humans depend on supermarkets for their vegetables and meat.
 - c. It may seem as if modern Missourians do not interact as closely with plants and animals as they did in the past, but any human activity affects other organisms.
2. Identify examples in Missouri where human activity has had a beneficial or harmful effect on other organisms. (pages 36–38)
 - a. Beneficial effects—Examples
 - 1) Humans build and maintain healthy pond ecosystems.
 - 2) People work together to bring parks and hiking trails back into their cities. These green spaces provide habitat for native trees and other plants and attract birds, butterflies, rabbits, foxes and many other organisms necessary for healthy ecosystems.
 - 3) Hunting and fishing are ways for humans to interact with their environment just as other predators do. Missourians who follow the rules and regulations set by the Department of Conservation help to manage and balance wildlife populations.
 - 4) Hiking, bird watching, butterfly watching, mushroom hunting and outdoor photography are other ways humans interact with organisms.
 - 5) People who put out bird feeders, bird baths, and bird houses provide food, water and shelter for Missouri birds.
 - 6) Careful harvesting removes mature trees for use as lumber and paper. Harvesting also provides space and more sunlight on the forest floor for the next generation of trees as well as healthy habitat for other forest organisms.
 - 7) Many people are careful not to harm other organisms when they are exploring and discovering nature.
 - 8) People join organizations and groups to help Missouri's ecosystems. They also plant native plants and call in to report poachers.
 - a) ForestKeepers—Volunteers adopt sections of forest and keep records of the forest's health.
 - b) Adopt-A-Trail—Interested hikers, bikers, and motorcyclists who want to have safe and enjoyable trails, adopt sections of conservation area trails and monitor them.
 - c) Missouri StreamTeam—Volunteer groups adopt sections of Missouri rivers, streams and creeks. They test the quality of the water and clean up litter.
 - d) Operation GameThief—People can call in and report poachers.
 - e) Grow Native—Planting native plants not only benefits wildlife, but the plants can be enjoyable for the gardener.
 - b. Harmful effects—Examples
 - 1) When people carve their initials on the bark of a tree, carving leaves the tree's trunk open to disease and insects.
 - 2) People who hike, ride ATVs, bicycles or horses off marked trails through streams, forests and prairies can damage these ecosystems.
 - 3) Some people litter, and litter is not only harmful to organisms and their environment, it is also ugly.

activity 8.1 : human interactions continued

estimated time 30–40 minutes

objective

Students will be able to

1. Explain how humans are just one of the organisms interacting with plants and animals in Missouri.
2. Identify examples in Missouri where human activity has had a beneficial or harmful effect on other organisms.

teacher preparation

This activity will tie in closely with the lists generated by students in *Activity 7.3* and will balance out the harmful effects with beneficial effects of human interactions.

This is an outdoor activity. Take a brief walk around the schoolyard and note where you find examples of harmful and beneficial effects of human interactions. During the course of the activity, if students are unsure and/or unable to find examples, refer to your notes and provide subtle prompts for students to discover examples.

materials

Science notebooks

Pencils

Thermometers

Flip chart/white board with lists generated in *Activity 7.3*

Class copies of *Writing Prompt Scoring Guide* (Appendix C)

procedure

1. Have students complete their science notebook headings and take and record outside air temperature.

Q. How are humans part of an ecosystem?

- a. A human is an organism living with other human organisms to form populations of humans. Human populations living among other populations of organisms become part of a community. Add the non-living things, such as sunlight, water, temperature, soil, landforms and air, and humans become part of an ecosystem.
- b. Humans are part of food chains. They are consumers, and energy is passed along to them through the producers and consumers they eat.
 - 1) Most humans are naturally omnivores.
 - 2) Some humans are vegetarians (herbivores).
 - 3) Some humans farm and hunt for food.
 - 4) Some humans depend on supermarkets for their vegetables and meat.
 - 5) Humans have teeth similar to omnivores. Most humans choose to be omnivores. Some humans choose to be herbivores (vegetarians).
- c. It may seem as if modern Missourians do not interact as closely with plants and animals as they did in the past, but any human activity affects other organisms.

2. Have the flip chart/white board available with the lists generated during *Activity 7.3*.

3. Instruct students to create two columns in their science notebooks and label the first column “Harmful Effects.”

Q. What does “harmful effect” mean?

- A. Harmful means something that injures or hurts. A harmful effect is the result or consequence of something causing injury or hurt.

4. Instruct students to label their second column “Beneficial Effects.”

Q. What does “beneficial effect” mean?

- A. Something beneficial is something that is good. A beneficial effect is the result or consequence of something good.

5. Moving through the flip chart list generated in *Activity 7.3*, have students indicate whether each item listed is a harmful effect or a beneficial effect. Instruct students to write these in the correct columns in their science notebooks.
6. Instruct students to move around their schoolyard ecosystem (within pre-determined parameters). Have students record the effects of human interactions found throughout their schoolyard ecosystem. Examples of these human interactions should be listed in their science notebooks under the "Harmful Effects" or the "Beneficial Effects" columns. (Ex: Harmful effects—worn down grass and gardens where students took shortcuts; Beneficial effects—native flower gardens)
7. Have students refer to Chapter 8 in their student books to find more examples of human interactions.

Q. What other human interactions would you like to add to your lists? Are they harmful or beneficial effects of human interactions?

A. Beneficial effects—Examples

1. Humans build and maintain healthy pond ecosystems.
2. People work together to bring parks and hiking trails back into their cities. These green spaces provide habitat for native trees and other plants and attract birds, butterflies, rabbits, foxes and many other organisms necessary for healthy ecosystems.
3. Hunting and fishing are ways for humans to interact with their environment just as other predators do. Missourians who follow the rules and regulations set by the Department of Conservation help to manage and balance wildlife populations.
4. Hiking, bird watching, butterfly watching, mushroom hunting and outdoor photography are other ways humans interact with organisms.
5. People who put out bird feeders, bird baths and bird houses provide food, water and shelter for Missouri birds.
6. People who plant native flowers and grasses provide food and shelter for birds, insects and many other animals.
7. Careful harvesting (cutting down certain trees) removes mature trees for use as lumber and paper. Harvesting also provides space and more sunlight on the forest floor for the next generation of trees as well as healthy habitat for other forest organisms.
8. Many people are careful not to harm other organisms when they are exploring and discovering nature.
9. People join organizations and groups to help Missouri's ecosystems. They also plant native plants and call in to report poachers.
 - (1) ForestKeepers—Volunteers adopt sections of forest and keep records of the forest's health.
 - (2) Adopt-A-Trail—Interested hikers, bikers and motorcyclists who want to have safe and enjoyable trails adopt sections of conservation area trails and monitor them.
 - (3) Missouri Stream Team—Volunteer groups adopt sections of Missouri rivers, streams and creeks. They test the quality of the water and clean up litter.
 - (4) Operation Game Thief—People can call in anonymously and report poachers.
 - (5) Grow Native—Planting native plants not only benefits wildlife, but the plants can be enjoyable for the gardener.

Harmful effects—Examples

1. When people carve their initials on the bark of a tree, carving leaves the tree's trunk open to disease and insects.
2. People who hike, ride ATVs, bicycles or horses off marked trails through streams, forests and prairies can damage these ecosystems.
3. Some people litter, and litter is not only harmful to organisms and their environment, it is also ugly.

wrap-up/formative assessment

After discussing the items on the lists, distribute *Writing Scoring Guide* to students. Ask students to re-read the summary box for Chapter 8 in their student book and write at least three paragraphs in their science notebooks describing how they feel about their role as a human organism in the schoolyard and what effects they feel their interactions have had on their schoolyard ecosystem.

optional activity 8.a : can they live here?

estimated time Several class sessions/homework

objectives

Students should be able to:

1. Research and describe the habitat needs for a specific selection of wildlife species. Evaluate the habitat quality of these species in their outdoor classroom or schoolyard.
2. Develop a management plan to improve the outdoor classroom/schoolyard wildlife habitat.
3. Present plans to the class using visual aids.
4. Select and implement a management plan.

teacher preparation

This activity is related to “Snips and Snags” in the November 2000 issue of *Outside In*. It can be found on the Web at: www.mdc.mo.gov/kids/out-in/2000/04/4.htm. Students research three of the basic needs of several animals to determine if they can be found in their outdoor classroom or schoolyard. Students then develop and carry out a management plan to attract desired animals. Check with your school administrator about this activity. You may need to get permission to implement the winning plan.

Make copies of the copy page or direct students to make a chart with the desired information in their science notebooks.

materials

Science notebooks

Pencils

Copy page 8.A—*Can They Live Here?*

Internet access

Wildlife reference materials

procedure

1. Have students read “Snips and Snag” in the November 2000 issue of *Outside In* at: www.mdc.mo.gov/kids/out-in/2000/04/4.htm.
2. Tell students that they are going to research the needs of five Missouri wildlife species (from a list of 15 species) and then inspect their outdoor classroom/schoolyard to determine if it provides what each animal needs for food, water and shelter.
3. Provide each student with a copy page. Divide the class into groups of three or four. Ask each group to select five animals from the list and add the names of these animals to their charts. Each student should record the information in their own chart. Review the kind of information that they need to record for each animal (needs for food, water and shelter).
4. Following their research, conduct an outdoor classroom inspection and have students record their findings in the last two columns of the chart.
5. Direct the students to continue working in their groups to develop a management strategy to attract missing animals. Plans should be feasible, as the winning team’s plan may be implemented in the outdoor classroom/schoolyard.
6. Have teams present their management plans. Each presentation must include some type of visual aid (power point, diorama, poster, mural, cartoon strips, etc.).
7. After all teams have made their presentations, have students (or a panel of faculty and parents) vote for a management plan that could be implemented in your outdoor classroom/schoolyard.
8. Discuss the winning team’s plan as a class and make any necessary modifications. Have the class implement the plan and monitor the area for signs of increased wildlife use.

1. Select five Missouri animals from the list that follows and record their names in the chart below or a chart you create in your science notebook.

Black-capped chickadee	Nuthatch	Salamander
Butterfly	Opossum	Shrew
Flying squirrel	Owl	Skunk
Fox or gray squirrel	Rabbit	Toad
Honeybee	Raccoon	Woodpecker

2. Research what each animal needs for food, water and shelter and note this information on the chart. When directed by your teacher, inspect your outdoor classroom/schoolyard to determine if each animal's needs are satisfied there. If not, suggest improvements to the outdoor classroom/schoolyard that would attract the selected animals.

	Results of library or internet research			Outdoor classroom/schoolyard inspection	
Name of animal	Food needs	Water needs	Shelter needs	Is there evidence that the animal lives here?	If not, what could be done to attract the animal?

3. Working in your group, develop a management strategy to attract the missing animals on your list. Present this strategy to the rest of your class using a visual aid (power point, diorama, poster, mural, cartoon strips, etc.). Be creative, but remember that your project must be feasible!
4. After all presentations, the class or invited guests will vote on the best management plan.
5. Implement the selected plan in your outdoor classroom/schoolyard if approved. Monitor the area for signs of new animal activity.

optional activity 8.b : interactive web

estimated time 30–40 minutes

objectives

Students will be able to

1. Explain how humans are just one of the organisms interacting with plants and animals in Missouri.
2. Explain that no matter how public or private land is used, living and non-living things are affected.
3. Identify examples in Missouri where human activity has had a beneficial or harmful effect on other organisms as well as on non-living things, such as water.

teacher preparation

This activity would work best outdoors, allowing for more space than the classroom.

In advance, have *Optional Activity 8.B Land Use Cards* copied, laminated (optional), cut and grouped in sets. The small letter on the bottom right corner of each card indicates the set to which a card belongs. Two or three sets may be needed depending on the number of students. Each student should have at least one card. Use complete sets when possible.

This activity is designed to introduce interactions among and issues arising from the diverse ways people use public and private land. People have many diverse reasons for using public land; yet there is only so much public land available for everyone to use. This often causes conflicts among different groups of people attempting to use the public areas at the same time. The bottom line is that no matter how public or private land is used, everything and everyone is affected in one way or another.

materials

Science notebooks

Pencils

Thermometers

Optional Activity 8.B Land Use Cards

Ball/skein of yarn

procedure

1. Have students prepare their science notebook headings and take and record outside air temperature.
2. Have the *Land Use Cards* arranged face down in a circle on the ground.
3. Have students stand behind one of the *Land Use Cards* on the ground and face in towards the center of the circle. (Students may be asked to hold two cards if necessary to get through two or more cycles.)
4. Instruct students to pick up and read the card before them. Check that students understand the information on their cards.

Q. What is the source of all energy for living things?

A. The sun.

5. Have the sun card holder step into the center of the circle and take one end of the yarn.
6. Explain that all students will eventually be handed a piece of yarn. If the yarn is dropped, the activity will not succeed. The sun has the responsibility of holding several pieces of yarn without dropping any of them.
7. Explain that the purpose of this activity is to think about the ways people use public and private land, about how people and other organisms interact with each other and with non-living things on public and private land, and about the effects of those interactions.

Q. What organisms get energy from the sun to make their own food?

A. Producers.

8. Instruct students to look at their card and raise their hand if they are a producer.
9. Hand the end of the yarn to the sun in the middle of the circle and extend it to one of the students with a producer card. Have the student tell the class which producer he or she is.
10. Ask students to raise their hands if they are a farmer who raises this type of producer. Extend the yarn on to one of these students.
11. Ask students to raise their hands if they are an animal raised on a farm. Extend the yarn from the farmer to a student with a farm animal card.
12. Continue by asking the following questions in this order, extending the yarn between students and having students state who or what they are:
 - A farmer who raises that farm animal
 - A game animal
 - A hunter who hunts that game animal
 - A part of a wetland OR wild inhabitant of a wetland OR an issue related to wetlands
 - A recreational user of wetlands
 - A conservation area (land for public use)
 - A recreational user of conservation areas (public lands)
 - An urban area user
 - An invasive species
13. Work back and forth across the circle to connect each inhabitant/user with yarn. Once the above list is connected, one chain is complete. Students holding yarn should continue to do so.
14. Return to the sun and repeat the same list of connections, again, connecting to different but appropriate students. Each chain in the web should begin with the sun and a producer and end with an invasive species. Continue until all students are connected. Be sure to return to the sun after each invasive species is connected.

Q. Anyone want to describe what we have here?

A. A giant web.
15. Remind students that the final and most important part of this activity will not work if any yarn is dropped. Explain that when certain students are instructed to give the yarn a gentle tug, it is very important that no one yanks the yarn out of anyone else's hand.
16. This is a giant web of different ways land is used.

Q. Which land user, including animals, do you think creates the least harmful effects on the other parts of the web?

A. Answers will vary and could include hunters, ATV riders, farmers, canoeists, etc.
17. Choose one user suggested by the students and instruct the student with that particular card to tug gently on their piece of yarn, pulling it towards him or herself several times. Instruct any other students who feel that tug to begin tugging just as gently. Instruct any other students who feel those tugs to begin tugging—until all students are tugging on the yarn.

Q. What does this mean? How could that (first tugger's card) affect everything?

A. Have students make real life connections when they answer. The conclusion that should be drawn is that all uses of land (or an ecosystem), no matter how large or small, eventually affect the other users and organisms on the land in some way.
18. Ask for another activity/animal/plant/farming practice/land use/etc., and repeat the tugging. Ask the same question.

Q. Ask any student with a water quality card to raise their hand? How many tugs did it take before you felt the tug? How important is that?

A. Water quality might not have been part of the first two or three tugs, but once it was involved and began tugging, it affected everything else. Water is one of the basic needs of all living things. If water quality is affected in a harmful way (by crop or golf course lawn fertilizer, farm animal waste, cattle in creeks, gravel mining, ATV riding through rivers and streams, littering, etc.), many living organisms will be affected.

19. If an invasive species had not been chosen to tug first, repeat the activity using one and discuss the results.

Q. Which activity/user caused everyone to feel the tugging more quickly and why?

A. Answer will vary.

Q. What does this mean to us here in our schoolyard ecosystem?

A. Answers will vary. Every human organism that uses the schoolyard in any way at all (short cut to a street; recess at school; playground use on weekends; staff parking; trash pick-up worker; etc.) and every organism living in/on/visiting the schoolyard has some effect (harmful or beneficial) on the rest of the schoolyard ecosystem.

20. Have students put the yarn down on the ground next to their cards and ask for a volunteer to roll it all up in a ball and volunteers to pick up the *Land Use Cards*.

wrap-up/formative assessment See *Wrap-Up/Formative Assessments* in the Teacher Notes section of the introductory material to choose a strategy that meets student needs.

Optional Activity 8.B—Land Use Cards
SUN (Use this one for all groups.)

Sun

producer

Soy beans

A

farmer

On your land
you grow
and harvest
soybeans.

A

farm animals

Cattle

A

farmer

On your
land you
raise cattle.

A

game animals

Ducks

A

hunters

You enjoy
hunting
ducks.

A

**wetland issues
and inhabitants**

Homeowner

A

**wetland
recreational users**

Canoeist

A

conservation areas

Fountain
Grove
CA

A

recreational visitor

On
conservation
areas, you
enjoy hiking.

A

urban area uses

Highway
development

A

invasive species

Sericea
lespedeza

A

producer

Timber

B

farmer

On your
land you grow
and harvest
timber.

B

farm animals

Dairy cows

B

farmer

On your
land you
raise dairy
COWS.

B

game animals

Wild
turkeys

B

hunters

You enjoy
hunting
wild turkeys.

B

**wetland issues
and inhabitants**

Water
quality

B

**wetland
recreational users**

Swimmers

B

conservation areas

Lost Pond
CA

B

recreational visitor

On
conservation
areas, you
enjoy camping.

B

urban area uses

Housing
development

B

invasive species

Zebra
mussels

B

producer

Warm
season
grasses

C

farmer

On your
land you grow
and harvest
warm season
grasses.

C

farm animals

Domestic
turkeys

C

farmer

On your land
you raise
domestic
turkeys.

C

game animals

Deer

C

hunters

You enjoy
hunting
deer.

C

**wetland issues
and inhabitants**

Smallmouth
bass

C

**wetland
recreational users**

Anglers

C

conservation areas

Four Rivers
CA

C

recreational visitor

On
conservation
areas, you
enjoy horseback
riding.

C

urban area uses

Schools

C

invasive species

Teasel

C

producer

Wheat

D

farmer

On your
land you grow
and harvest
wheat.

D

farm animals

Pigs

D

farmer

On your
land you
raise pigs.

D

game animals

Mourning
doves

D

hunters

You enjoy
hunting
mourning
doves.

D

**wetland issues
and inhabitants**

Riparian
corridor

D

**wetland
recreational users**

Gravel
mining

D

conservation areas

Clifty Creek
CA

D

recreational visitor

On
conservation
areas, you
enjoy ATV
riding.

D

urban area uses

Urban
sprawl

D

invasive species

Bush
honeysuckle

D

optional activity 8.c : mdc video segments

1. *The Snakes' Tale* (20:00 minutes)—It's easy to learn tall tales about snakes, but the truth about how they live is just as intriguing. See how snakes mate, give birth and feed; how they protect themselves from danger; and how they sense the world around them.
2. *Massassauga Rattlesnake* (5:36 minutes)—Meet the Massassauga...but take special care when tracking THIS endangered species!
3. *Great Blue Herons* (4:26 minutes)—Take a good look at Missouri's largest, and probably most familiar, heron...the great blue. We'll visit colonies of great blues and examine their primitive-like qualities and see why their numbers are on the rise in Missouri.
4. *No MOre Trash* (5:33 minutes)—Litter and pollution...it's an ongoing problem. See what you can do to help out in the new campaign that's joining forces to fight back.
5. *Friends of the Forest* (5:00 minutes)—See what these volunteers are doing to ensure forests for the future.

optional activity 8.d : what is going on in your neighborhood?

Students tour their neighborhood and make a list of activities that are going on. Examples: construction of a sidewalk, road or home; house being torn down; people riding bikes, playing ball, or playing golf; people planting native plants; litter blowing across yards; bird houses being put up. Write about how these human activities affect the environment.

optional activity 8.e : conservation programs

Participate in a conservation program such as Conservation Frontiers, ForestKeepers, Stream Team or Adopt-A-Trail. For information about these programs, visit www.MissouriConservation.org.

so, what do you know?—lesson 8

1. Can humans make their own food directly from the sun? Explain why or why not.
2. Are humans organisms? Explain why or why not.
3. Humans are consumers. As consumers how do humans fit into food chains?
4. Any human activity affects other organisms and ecosystems. An activity can have a beneficial or a harmful effect. For each activity on the left place an X in the column for the correct effect.

Human activities	Beneficial effect	Harmful effect
Build ponds		
Build small brush piles for shelter		
Carve initials on tree trunk		
Dig up lots of flowers in a prairie		
Drop trash on ground		
Eat deer harvested legally		
Harvest trees carefully		
Hike or bike on a trail		
Join a stream team to help care for a stream		
Kill deer outside of deer season		
Make parks and hiking trails		
Obey fishing regulations		
Pick up litter		
Put gum and candy wrappers in a trash can		
Put out bird feeders		
Put up bird houses		
Ride ATVs through a stream or off a trail in the forest		
Ride horses in streams		

so, what do you know?—lesson 8

1. Can humans make their own food directly from the sun? Explain why or why not.

answer —No *AND*

- Humans are not producers. They are consumers. *OR*
- Humans eat plants and animals because they cannot produce their own food. They are consumers. *OR*
- Other sentences that convey the same meaning.

scoring key — 2 points both components answered correctly; 1 point— No

2. Are humans organisms? Explain why or why not.

answer —Yes *AND* Humans are living things that can grow and reproduce. Living things are organisms. *OR*
Other sentences that convey the same meaning.

scoring key — 4 points—both parts are correct; 2 points—either part is correct; 0 points—neither part is correct.

3. Humans are consumers. As consumers, how do humans fit into food chains?

answer

- Some humans are vegetarians (herbivores) because they only eat plants. Most humans are omnivores because they eat plants and animals. Because humans eat plants and animals, humans are part of many food chains.
- *OR* Because humans are herbivores or omnivores, humans are part of many food chains.
- Other sentences that convey the same meaning.

scoring key — 4 points for one of the answers provided

4. Any human activity affects other organisms and ecosystems. An activity can have a beneficial or a harmful effect. For each activity on the left place an X in the column for the correct effect. (1 point for each X in the correct column; maximum of 18 points)

Human activities	Beneficial effect	Harmful effect
Build ponds	X	
Build small brush piles for shelter	X	
Carve initials on tree trunk		X
Dig up lots of flowers in a prairie		X
Drop trash on ground		X
Eat deer harvested legally	X	
Harvest trees carefully	X	
Hike or bike on a trail	X	
Join a stream team to help care for a stream	X	
Kill deer outside of deer season		X
Make parks and hiking trails	X	
Obey fishing regulations	X	
Pick up litter	X	
Put gum and candy wrappers in a trash can	X	
Put out bird feeders	X	
Put up bird houses	X	
Ride ATVs through a stream or off a trail in the forest		X
Ride horses in streams		X